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explanation as to what is to be done, and written reports of what has been seen. The great number and variety of the exercises would permit selections for a general course in botany, or special courses intended for medical or pharmaceutical students. One section, of some hundred exercises, is devoted to important anatomical and morphological papers, each represented by a single exercise. Another takes up the "simples" of the Dutch pharmacopoeia for the benefit of pharmaceutical students. The language of the handbook will probably preclude its use even by teachers in this country.—C. R. B.

Jost's plant physiology.—The active demand which exhausted the first edition of this valuable work, and the advances in plant physiology since 1903, not to mention the appearance of an English translation, have required the preparation of a second German edition.⁴ As we have formerly and recently expressed a highly favorable opinion of the quality of this work,⁵ nothing is now needed but to point out changes in the new edition. The title-page indicates the transfer of Dr. JOST from Strassburg to Bonn. In the arrangement of material we note the change in the title of the third section from *Energiewechsel* to *Ortwechsel*, and the transfer of the lecture on the forms of energy in the plant from the third section to the first (*Stoffwechsel*), bringing it into close association with the discussion of dissimilation, where it more properly belongs. The term *Ortwechsel* is a happy designation of the section which deals with movements. The additions, though slight, are numerous and in some cases important. The number of figures is increased nearly a dozen, and some substitutions are noticeable. The bibliography, which formerly followed each chapter, is now gathered together at the close of the volume, where it is much more compactly presented; but the alphabetic arrangement is continued under each topic, and by bold-faced type the possible obscurity of the solid lists is obviated. By this change some twenty pages are gained, and devoted to the new matter, so that the size of the volume remains practically the same.—C. R. B.

Molecular physiology.—In 1903 Professor LÉO ERRERA prepared a course of lectures in what he calls molecular physiology.⁶ The manuscript has been arranged and edited by Dr. SCHOUTEDEN and has been published by the Botanical Institute in its *Recueil*. In a preface Professor H. J. HAMBURGER of Groningen, to whom the manuscript was submitted for advice as to its publication, writes "que ce serait un crime de lèse-science de ne pas les publier."

The lessons consist of a presentation of those portions of molecular physics which are particularly applicable to physiology. The properties and behavior of gases, liquids, and solids, such as diffusion, surface tension, cohesion, viscosity,

⁴ JOST, L., *Vorlesugen über Pflanzenphysiologie*. 2 ed. Imp. 8vo. pp. xiv+693. figs. 183. Jena: Gustav Fischer. 1908. *M*14; geb. *M*16.

⁵ BOT. GAZETTE 37:390. 1904, and 44:309. 1907.

⁶ ERRERA, LÉO, *Cours de physiologie moléculaire, fait au doctorat en sciences botaniques en 1903*. Leçons recueillies et rédigées par H. SCHOUTEDEN. *Recueil Inst. Bot. Bruxelles* 7:1-153. 1907.

imbibition, and solution, are discussed, first in the abstract, and then applied, so far as possible, to the explanation of the formation of membranes, protoplasmic movement, cell division, molecular structure, turgor, the movement of water, etc. They form a useful summary, naturally not quite up to date, of facts and theories which it is essential for the student of physiology to command. It is doubtful if elsewhere they can be found more conveniently arranged and effectively presented. All of them have for some years found a place in the writer's lectures on plant physics.—C. R. B.

North American Flora.—The first part of volume IX has just appeared, being the sixth part published. It contains a part of the Polyporaceae, by W. A. MURRILL, 33 genera being presented, the following being new: *Hydnoporia*, *Fuscoporia* (9 spp., 2 new), *Fuscoporella* (6 spp., 5 new), *Fomitiporia* (17 spp., 16 new), *Fomitiporella* (9 spp., 7 new), *Tinctoporia* (1 new), *Melanoporella*, and *Melanoporia*. The large genera are *Coriolus* (40 spp., 13 new), *Polyporus* (35 spp., 2 new), *Tyromyces* (25 spp., 6 new), and *Hexagona* (19 spp., 5 new). In other genera 9 new species are described.—J. M. C.

Icones Plantarum.⁷—The species illustrated in the twenty-five plates of this part include 11 new species by HEMSLEY, one of which represents a new Chinese genus (*Sinofranchetia*) of Lardizabalaceae. Five additional new species are described, but not illustrated. These 16 new species are all oriental, chiefly Chinese, and belong to the following families: Sabiaceae, Hamamelidaceae (8), Lardizabalaceae (6), and Triuridaceae.—J. M. C.

Pflanzenfamilien.⁸—Part 229 contains the completion of Hookeriaceae, the Hypopterygiaceae, Helicophyllaceae, Rhacopilaceae, and most of Leskeaceae, by V. F. BROTHERUS. Part 230 contains the completion of Ascolichenes and the beginning of Hymenolichenes, by A. ZAHLBRUCKNER. The fourth part concludes the second supplement (1899-1904) and includes the title-page and index.—J. M. C.

Das Pflanzenreich.⁹—Part 32 contains the tribe Coelogyninae of Orchidaceae by PFITZER and KRÄNZLIN. Of the 15 genera recognized, the following are described as new: *Ptychogyne*, *Hologyne*, *Sigmatogyne*, *Chelonistele*, and *Camelostalix*. The species number 246, the large genera being *Coelogyne* (103), *Dendrochilum* (74), and *Pholidota* (31).—J. M. C.

Eucalyptus.—The ninth part of MAIDEN's revision of *Eucalyptus*¹⁰ contains the description, synonymy, range, and affinities of eight species. This series, begun in 1903, now includes thirty-one species.—J. M. C.

⁷ HOOKER'S *Icones Plantarum*. IV. 92: pls. 2826-2850. 1907.

⁸ ENGLER, A., und PRANTL, K., *Die natürlichen Pflanzenfamilien*. Lief. 229 und 228 und Ergänzungsheft II, Lief. 4. Leipzig: Wilhelm Engelmann. 1907.

⁹ ENGLER, A., *Das Pflanzenreich*. Heft. 32. Orchidaceae-Monandreae-Coelogyninae von E. PFITZER und Fr. KRÄNZLIN. pp. 169. figs. 54 (294). Leipzig: Wilhelm Engelmann. 1907. M8.40.

¹⁰ MAIDEN, J. H., *A critical revision of the genus Eucalyptus*. Part IX, pp. 259-294. pls. 41-44. Sydney: Published by the State of New South Wales. 1907. 2s. 6d.